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ABSTRACT

An ongoing series of studies at the University of Illinois at Urbana-Champaign concerning cross-cultural interpretation of implicature in conversation is discussed. Implicature is defined as the process of making inferences about the meaning of an utterance in the context in which it occurs. The studies focus on non-native speakers' (NNSs') interpretation of implicatures in American English. The first two studies, in 1986-91 (n=436 NNSs) and 1990-93 (n=304 NNSs), found that NNSs can develop a high level of proficiency in interpreting implicatures if given enough time, and that the amount of time required depends on implicature type, formulaic or relatively non-formulaic. The third study (1993) with 14 international students in an academic English course investigated whether classroom instruction on specific rules and patterns of implicature could speed acquisition of interpreting skills. Results suggest that formal instruction can be effective when focused on the more formulaic implicatures, while the less formulaic forms were as resistant to formal instruction as they appeared to be, in earlier research, to natural learning processes occurring in the American academic environment. Contains 11 references. (MSE)

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CAN NNS SKILL IN INTERPRETING IMPLICATURE IN AMERICAN ENGLISH BE IMPROVED THROUGH EXPLICIT INSTRUCTION? - A PILOT STUDY

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ABSTRACT

The ubiquity of conversational implicature has become well known, but the extent to which it is a useful strategy in cross cultural interaction is not so clear. One study that has attempted to answer some of the questions related to this issue has been ongoing since 1986 at the University of Illinois (Urbana-Champaign). Questions such as the extent to which nonnative speakers of English on arrival in the United States can derive the same message from an implicature in English as the native speakers do; how fast the nonnative speakers can close the gap that exists between their proficiency and that of the natives; and whether focused instruction in the ESL classroom can speed up the learning process with regard to this facet of a nonnative speaker's communicative competence have been addressed. This paper will review the results that have come out of that study with a special emphasis on the question of how much explicit classroom instruction can enhance the learner's ability to interpret implicatures in American English as the native speakers do.

THE USE OF IMPLICATURE: INTERPRETING AN UTTERANCE IN TERMS OF IT'S CONTEXT

Conversational implicature is the label Grice (1975, 1981) gave to the inferential process through which the meaning of any utterance is understood in terms of the context in which it occurs. Consider, for example, the question Do you have any coffee? uttered in a fast food restaurant, on the one hand, or in a grocery store, on the other. In the first case, you are asking for a cup of coffee to drink. In the second, you are asking if they have coffee beans in some form and, perhaps, exactly where they are in the store. Or, again, imagine the remark *It's smokey in here* being made by a couple returning home after a vacation, on the one hand, or by a non-smoker among smokers on the other. Uttered by the couple, the comment is an expression of concern or alarm; from the non-smoker, it is an indirect complaint. And if this same remark came from someone sitting in front of a fire in the fireplace on a winter's night, it might be a suggestion that someone check to make sure the flue was open. All of these differences in

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the meaning of these utterances are derived from an interaction of the utterance and the context in which it occurred, and that interaction is the basis of *implicature*. Given these examples, together with others that we come into contact with everyday,it is not difficult to see why Green (1989) would see *conversational implicature* as **"an absolutely unremarkable and ordinary conversational strategy"** and, therefore, very much a part of any proficient speaker's communicative competence.

In describing how implicature works, Grice (1975) begins by noting that all participants in a conversation expect themselves and the others to make their contributions appropriate to the progress of the conversation at any particular moment. In other words, each speaker is expected to make what he/she says **truthful, appropriately informative, relevant,** and **clear**. When the literal meaning of what they hear does not seem to have these characteristics, the other participants assume that the speaker is expressing him-/herself indirectly and look for another meaning for what has been said. When they find one that does seem to have those characteristics, they assume that to be the message the speaker intended. Messages derived in this way, along with the process that produces them, can be referred to as conversational implicature.

But for an implicature to have a reasonable chance of being interpreted as the speaker intended it to be, the speaker and hearer must share a **common perception** of at least four facets of any conversational context (Grice, 1975): **1)** the **utterance** from which the implicature is to be derived; **2)** the **roles and expectations of the participants** in a conversation; **3)** the **context** in which the utterance occurs; and 4) the world around them as it pertains to their interaction. And that raises an interesting question for anyone involved in cross-cultural communication, one that Grice did not address: Given the differences that exist in the way people from one culture or another perceive the various aspects of the conversational context, **to what extent can implicature be an effective strategy in an interaction between people with disparate linguistic and cultural backgrounds?**

INVESTIGATING IMPLICATURE IN CROSS CULTURAL COMMUNICATION

The first attempt to answer this question was by Keenan (1976). Through her work with the Malagasy, she showed that although Grice's maxims might be universal, they could be implemented differently from one society to another -and that this could cause individuals from one culture to misinterpret implicatures used by those from the other. But until 1986, little else seems to have been done in this area.[1]

The First Longitudinal Study: 1986-91

In 1986, at the University of Illinois (Urbana Campus), 436 nonnative English speaking international students [2] who were entering the university [3] were tested to determine the extent to which their interpretation of implicatures in American English were the same as those of native speakers who took the same test. The test items, two examples of which are given in (1) and (2), consisted of a dialogue containing an implicature that subjects were to interpret and sufficient context to permit them to do so. In answering the item, subjects were to choose one

of the four interpretations following the dialogue 4. Sometimes the necessary context is separate from the dialogue; sometimes it is contained within it. [The expected response here and elsewhere in this paper is indicated by an asterisk (*)].

(1) **Irony** - based on a contrast between an idealized marriage and/or friendship and what Americans seem to see as the potential instability of both.

Bill and Peter have been good friends since they were children. They roomed together in college and travelled Europe together after graduation. Now friends have told Bill that they saw Peter dancing with Bill's wife while Bill was away.

Bill: Peter knows how to be a really good friend.

Which of the following best says what Bill means?

*a. Peter is not acting the way a good friend should.
b. Peter and Bill's wife are becoming really good friends while Peter is away.
c. Peter is a good friend, so Bill can trust him.
d. Nothing should be allowed to interfere with Bill and Peter's friendship.

(2) **Relevance maxim** - based on the regularity of the postman's deliveries. Also relevant is the fact that Helen's statement immediately follows Frank's question and would, therefore, be interpreted as some sort of answer to it.

Frank wanted to know what time it was, but he did not have a watch.

Frank: What time is it, Helen?
Helen: The postman has been here.
Frank: Okay. Thanks.

What message does Frank probably get from what Helen says?

*a. She is telling him approximately what time it is by telling him that the postman has already been there.
b. By changing the subject, Helen is telling Frank that she does not know what time it is.
c. She thinks that Frank should stop what he is doing and read his mail.
d. Frank will not be able to derive any message from what Helen says, since she did not answer his question. [6]

Norms for the test were developed by giving the same items to 28 college educated American NS. The overall results of the study (see Table 1) show that the NNS derived the same interpretation as the NS approximately 79.5% of the time when they first arrived in the United States in August, 1986. (For a more detailed discussion, see Bouton (1988)) [7]. Four and a half years later, subjects from this same group were tested again. By this time, although the performance of NS and NNS was still different to a statistically significant degree ($p < 0.019$), the NNS had come much closer to native-like proficiency in the interpretation of most implicatures, choosing the same response as the NS 92% of the time. In fact, when the responses the NNS gave to 20 of the 28 questions this second time around were grouped together, there was essentially no difference at all between the performance of the native and nonnative speakers on those items. As for the other 8 items, i.e., those that the NNS were still unable to interpret as Americans do, those items seem to be difficult because of specific points of American culture found in the *substance* of the particular test item (Bouton, 1992). [8]

Table 1: NNS Interpretation of Implicature in American English: Growth over 4 1/2 Years

	NNS Aug '86	NNS Jan '91	NS Aug '86
Number of Items	28	28	28
Mean Score	19.97	22.97	25.04
Standard Deviation	3.55	3.05	11.77
Range of Raw Scores	10-26	13-28	22-28
Ration of $Mean_{nns}/Mean_{ns}$	79.5%	91.5%	—
N	30	30	28

From these results, it was apparent that NNS can develop a high level of proficiency in interpreting implicatures in English if given enough time. But how much time was enough? How fast had these NNS attained this skill? Had it come quickly? Or did it take the full 4 1/2 years?

The Second Longitudinal Study: 1990-1993.

To answer this question, two more groups of NNS were studied. Both of these groups were selected from among the 304 NNS whose ability to interpret implicatures in American English had been tested when they first arrived on campus in August, 1990 - the first group after they had been on campus 17 months; the second, after 33 months. The test administered to these two groups was a shorter, revised version of the one that had been used for the 41/2 year study just described. [9]

At the same time, we wanted to compare the 17 and 33 month groups with NNS who had been on campus more than 4 years to see if the NNS ability to interpret implicature continued to increase. We could not use the results of the 4 1/2 year study just discussed because of the difference in the test instruments used. And so, as a temporary measure, while waiting for the time on campus of the NNS who arrived in August, 1990, to reach 4 1/2 years, we tested a

group of Chinese students who had been on campus between 4 and 7 years (which we will call the *4-7 year group*). The function of this group was to provide a benchmark against which to measure the progress of those NNS in the 17 and 33 month groups in order to see if we could expect much more growth beyond that of the 33 month group.

When the results attained from these two groups were analyzed they showed that their performance after 17 and 33 months, respectively, was significantly better than it had been when they first arrived on campus in 1990 ($p < 0.0001$). Also, although the mean score of the 33 month group (18.80) was slightly higher than that of the 17 month group (18.06), the difference was not significant ($p < 0.1869$); nor was there a significant difference between the scores of these groups and that of those who had been on campus from 4-7 years. The Scheffe Test showed the mean scores of all three of these groups to differ from that of the NS ($a = .05$).

Table 2 compares the results attained by the 17 and 33 month groups, the 4-7 year group, and the NS norm. To highlight the growth of each of the NNS groups, the results from the tests given after the NNS had been on campus for their respective periods are in bold type. Also, we have attempted to capture the relationship between the raw scores of the different NNS groups by expressing each as a percent of the score achieved by the NS on the same test.

And so, to the extent that it can be measured by an overall score on an instrument such as

Table 2: Comparison of the Overall Results Attained by the NS and NNS

	NNS BASE GROUP ON ARRIVAL 8/90, 1/91	NNS IMMERSION GROUPS[10] 17 Month Grp. Arr.	17 mo	33 Month Grp. Arr	33 mo	4-7 yrs	NS
Number of Items	22	22	**22**	22	**22**	**22**	22
Mean Score	16.74	16.50	**18.06**	17.17	**18.80**	**18.74**	19.92
Median	16.96	17.00	**18.50**	17.38	**19.14**	**19.50**	20.11
Std Dev	2.80	2.96	**3.11**	2.57	**1.62**	**2.68**	1.54
Range (raw score)	8-22	9-21	**9-22**	9-22	**15-21**	**11-22**	—
Ratio (NNS/NS)	84.02%	82.8%	**91.0%**	86.4%	**94.4%**	**94.1%**	—
N	375	34	**34**	35	**35**	**34**	77

the one used here, much of the progress attained by the NNS in this study in their ability to interpret implicatures in American English seems to have been achieved during the first 17 months of their stay on campus; from that point on progress was slow; and even after 4 years there is still a statistically significant difference between the performance of the NNS and the NS, as there was in the original study after 4 1/2 years.

But the overall statistics do not tell the whole story. To get a more complete picture of the relative competence of each of these groups to interpret implicature, we must also look at the particular items to see which were troublesome and which were not. Since what we are interested in here is the extent to which NNS derive the same meaning from implicatures as American NS do, we will consider an implicature to be *troublesome* to the extent to which interpretations of it by those two groups differ. To find this difference for each implicature, we will subtract the percent of NNS answering as expected from the percent of NS doing so. The data in Tables 3-5 pertain to such an item by item analysis for the NS and for each of the three

immersion groups at the end of their 17 months, 33 months, and 4-7 years. Also, as a base line by which to determine how difficult each implicature was for the NNS as a whole initially, the same data will be provided for the 375 NNS who arrived in August, 1990, and January, 1991.

In terms of their relative difficulty for NNS, the implicatures involved in this study can be divided into 3 sets. The first of these are those for which the percentage of each of the NNS and the percentage of NS doing so is essentially the same (see Table 3).

Table 3: Implicature for Which the Interpretations of NS and NNS Were Similar (i.e., NS - NNS < 7%) the Relevant Periods of NNS Residence

Item	375 NNS ON ARRIVAL	After 17 Mo NNS	After 33 Mo NNS	After 4-7 Yr NNS	NS	Type
16	99	100	100	100	100	Relevance
19	98	94	100	100	100	Relevance
4	92	100	100	94	97	Relevance
10	94	97	94	100	100	Relevance
25	78	88	89	94	88	Relevance
13	86	91	94	94	97	Relevance
23	75	88	89	94	95	Relevance
12	87	74	89	85	81	Min. Req.
20	82	82	83	82	81	Min. Req.
8	80	91	91	97	91	Ind. Crit.
24	74	74	86	68	70	Scalar
AVG	85.9	89.0	92.3	91.6	92.1	----

Except for the scalar implicature in item (24), the implicatures represented in this set seem to have been relatively easy to interpret for NS and NNS alike. The scalar implicature is included in this set because although it was more difficult than the other items, it was equally difficult for both the NS and NNS groups. In all of these examples, the percentage of NNS in the three groups who had been on campus for some time and that of the NS differs by no more than 7 points, with the exception of item (12) for the 17 month group. Even the NNS who had just arrived differed from the NS by more than 7 percentage points only 3 times. It also is worth noting that with two exceptions, the scalar implicature and an instance of indirect criticism, the implicatures in this relatively easy set all belong to two specific types: 7 are based on Grice's Relevance Maxim and 2 on a corollary of his Quantity Maxim that we will call the Minimum Requirement Rule (Levinson, 1983; Bouton,1989). At the same time, there are only 2 relevance based implicatures and none based on the Minimum Requirement Rule that are not in this set. In fact, both of these implicature types have regularly proved easier for NNS to interpret than any other single type (Bouton, 1988). Before going on to more difficult types of implicature, we will look at examples of each of these two.

What Grice's Relevance Maxim says is that we expect whatever a person contributes to a conversation to be relevant to the context in which it is said. When this seems not to be the case, members of the speaker's audience simply find another meaning that is relevant and assume that is the message the speaker intended. An example of an item involving this type of implicature is the following:

(3) **Relevance Maxim.**

Lars: Where's Rudy, Tom? Have you seen him this morning?

Tom: There's a yellow Honda parked over by Sarah's house.

What Tom is saying is that...

a. he just noticed that Sarah has bought a new yellow Honda.
b. he doesn't know where Rudy is.
*c. he thinks Rudy may be at Sarah's house.
d. he likes yellow Hondas and wants Lars to see one.

In this particular item, Tom's answer to Lars's question seems like a *non sequitur:* Lars asks about Rudy and Tom talks about a yellow Honda. But neither the NS nor the NNS had trouble making the connection: 100% of the Americans and 99% of the international students chose (c), the expected interpretation.

The second type of relatively easy implicature in this set, those based on the Minimum Requirement Rule (MRR), occur when it is clear from the context that the only information that is desired by the addressee is whether a certain minimum requirement has been met, e.g., the minimum collateral for a bank loan, the minimum score on a test for a particular grade, etc. In these cases, more precise information than that is unnecessary. For instance, in the following example, it is clear that what the banker wants to know is whether Nigel has the requisite 50 cows that will qualify him for the loan he wants. Whether or not he has more is of no importance at the moment. Therefore, the banker's question can be interpreted as "Do you have the necessary number of cows, Mr. Brown?" Under these conditions, all we know from Nigel's response is that he does have enough cows, at least 50. If he has fewer than that, he is lying. But he may well have more. That is not ruled out by the answer he gives to the banker.

(4) **Minimum Requirement Rule**. Nigel Brown is a dairy farmer and needs to borrow money to build a new barn. When he goes to the bank to apply for the loan, the banker tells him that he must have at least 50 cows on his farm in order to borrow enough money to build a barn. The following conversation then occurs:

Banker: Do you have 50 cows, Mr. Brown?

Nigel: Yes, I do.

Which of the following says exactly what Nigel means?

a. He has exactly 50 cows.
*b. He has at least 50 cows - maybe more.
c. He has no more than 50 cows - maybe less.
d. He could mean any of these three things.

The second major set of implicatures are also rather easy for most NNS and, in this sense, are like those in the first set (see Table 4). They differ, however, in that in each case, either the 17 month group or the 4-7 year group found them sufficiently difficult so that the percent of that group responding as expected was at least 14% lower than that of the NS. (In each case, the results from the group that found a particular item somewhat difficult appear in bold type.) Also, this set and the next both differ from the first in that both of them together contain only two instances of relevance-based implicature and none based on the Minimum Requirement Rule.

Table 4: Implicature for Which the Interpretations of NS and NNS Were Similar (i.e., NS - NNS < 7%) - Except for One Immersion Group in Each Case

Item	375 NNS On Arrival	After 17 Mo NNS	After 33 Mo NNS	After 4-7 Yr NNS	NS	Type
2	65	**82**	94	94	99	Ind. Crit.
7	88	97	94	**82**	99	POPE Q
5	89	**85**	91	97	100	Relevance
AVG	80.7	88.0	92.4	91.3	97.0	-----

The third set of implicatures is more difficult than the preceding two: this time most of the NNS groups differ from the NS group by at least 14 percentage points - and several times by as many as 24 or more (see Table 5). There are 4 cases in which individual groups come closer to the NS performance for the items in this table, but those groups are clearly the exception in each case. Again, as we did in Table 4, we have put the NNS percentages that differ from that of the NS by 14 or more points in bold type.

The types of implicature that are contained in this more troublesome set involve the Relevance Maxim (1 item), the POPE Q (2 items), a Sequence of Events (1 item)), Irony (2 items) and Indirect Criticism (1 item). Examples of each of these, including the difficult relevance-based item, can be found in (5)-(9).

Table 5: Implicatures More Difficult for NNS

Item	375 NNS On Arrival	After 17 Mo NNS	After 33 Mo NNS	After 4-7 Yr NNS	NS	Type
21	83	**82**	94	**82**	96	Relevance
17	79	**82**	**86**	92	100	POPE Q
11	65	**76**	86	**65**	91	Sequence
6	51	**53**	**57**	76	76	Irony
1	48	**62**	**71**	**53**	86	POPE Q
15	60	**76**	**71**	**76**	100	Indirect
18	47	**53**	**60**	**56**	75	Irony
AVG	80.7	88.0	92.4	91.3	97.0	------

(5) **Indirect Criticism through Implicature**. Two teachers are talking about a student's paper:

Mr. R: Have you finished with Mark's term paper yet?
Mr. M: Yeah, I read it last night.
Mr. R: What did you think of it?
Mr. M: Well, I thought it was well typed:

How did Mr. M like Mark's paper?

a. He liked it; he thought it was good
b. He thought it was important that the paper was well typed.
c. He really hadn't read it well enough to know.
*d. He did not like it.

(6) **The POPE Q Implicature.** A group of students are talking over their coming vaca tion. They would like to leave a day or two early, but one of their professors has said that they will have a test on the day before vacation begins. Noone will be excused, he said. Everyone had to take it. After class, some of the students get together to talk about the situation, and their conversation goes as follows:

Kate: I wish we didn't have that test next Friday. I wanted to leave for Florida before that.
Jake: Oh, I don't think we'll really have that test. Do you?
Mark: Professor Schmidt said he wasn't going anywhere this vacation. What do you think, Kate? Will he really give us that test? Do you think we have to stay around here until Friday?
Kate: Does the sun come up in the east these days?

What is the point of Kate's last question?

a. I don't know. Ask me a question I can answer.
b. Let's change the subject before we get really angry about it.
*c. Yes, he'll give us the test. You can count on it.
d. Almost everyone else will be leaving early. It always happens. We might as well do it, too.

(7) **Sequence Implicature.** Two friends are talking about what happened the previous evening.

Maria: Hey, I hear that Sandy went to Philadelphia last night and stole a car.
Tony: Not exactly. He stole a car and went to Philadelphia.
Maria: Are you sure? That's not the way I heard it.

What actually happened is that Sandy stole a car in Philadelphia last night. Which of the two has the right story then?

*a. Maria.
b. Tony.
c. Both are right since they are both saying essentially the same thing.
d. Neither of them has the story quite right.

(8) **Irony.** At a recent party, there was a lot of singing and piano playing. At one point, Sue played the piano and Mary sang. When Tom asked a friend what Mary had sung, the friend replied,

Friend: I'm not sure, but Sue was playing "My Wild Irish Rose."

Which of the following is the closest to what the friend meant by this remark?

a. He was only interested in Sue and did not listen to Mary
*b. Mary sang very badly.
c. Mary and Sue were not doing the same song.
d. The song that Mary sang was "My Wild Irish Rose."

(9) **Relevance-based Implicature (one that was difficult for theNNS).** Rachel and Wendy are jogging together.

Wendy: I can't keep up with you, Rachel. I'm out of breath.
Can't you slow down?
Rachel: I'm glad I don't smoke.

What does Rachel mean by this remark?

a. She has never smoked and she is glad that she hasn't.
b. She doesn't want to slow down.
c. She is stating her belief that smoking is bad for people.
*d. She is saying that the reason that Wendy is out of breath is that she smokes.

We can learn several things from considering these three sets of implicatures both in relation to each other and in relation to the different groups of NNS who interpreted them. First, both individual implicatures and whole sets of them varied in the difficulty they posed for NNS and, to a much lesser extent, for NS as well. Occasionally an item that bothered one of the small groups of NNS was easy for another. This variability has been noticed to at least some extent at each step of the overall longitudinal study of which this particular investigation is a part (Bouton, 1988, 1989,1993). But these variations are not merely a matter of chance, although chance undoubtedly plays some role. For one thing, it has been shown quite definitely elsewhere (Keenan, 1976; Bouton, 1988) that the opaqueness of particular implicatures in a specific situation depends to some extent on the cultural background of each of the participants involved, and we have been unable to keep the cultural makeup of the various samples *exactly* the same. However, this study suggests that another factor that makes one type of implicature difficult to learn is the type of reasoning necessary to work out the intended message.

In this latter regard, we can divide the implicatures that were used in this study into two sets: those that are in some sense formulaic and those that are not. Relevance-based implicatures in general, for example, are not: their interpretation is idiosyncratically dependent on the relationship between a particular utterance and its specific context. There is no single structural or semantic formula that underlies the whole range of implicatures that are based on the Relevance Maxim. Each instance of a relevance-based implicature must be approached on its own terms and, more than any other single type, it relies on the speaker and the hearer having a common perception of the principles of conversation and a mutual understanding of the context of the utterance in all its complexity. Relevance-based implicatures are usually easy for NNS from the time they arrive in the United States. On the other hand, when this proves not to be true in a particular case, it is because the hearers do not understand one or more points related to the nature of the utterance, the context, or both, as the speaker does. It follows that to learn to understand a particular relevance-based implicature, the NNS must learn the relevant culture points on which it is based. Given the complexity of the context of some implicatures, it is not surprising that at least some of them based on relevance that are opaque to NNS when they arrive remain impenetrable even after a relatively long stay in this country: items (2) and (21) on the test used in this study are examples of relevance implicatures that have proved difficult for NNS to learn to interpret.

Each of the other implicature types faced by the NNS in this study are based on a formula of some sort - structural, semantic, or pragmatic - that is crucial to a person's effective interpretation of the implicature involved. For example, in the POPE Q implicature, a person responds to one Yes/No question by asking another, to which the answer is obvious, e.g., *Does the sun come of up in the east?* in (6). In such cases, a listener is to assume that the answer to the first question is the same as the answer to the second - and just as obvious. If listeners do not recognize the structural and functional relationships between these two questions, they will not be able to use the POPE Q implicature to understand what the speaker means.

Or consider the implicature that we have labeled *indirect criticism*. Here there is no obvious structural formula, but there is a semantic one that a person can recognize and, from which we receive a clue as to the speaker's message. This implicature is often used in response to a request for a value judgement, e.g., *How do you like my new shoes?* when that judgement might prove offensive to the person asking for it. In this case, the speaker often responds with a positive remark about some peripheral, unimportant feature of whatever (s)he is asked to evaluate. What constitutes a peripheral feature will depend on the context to some extent: a response of *They certainly look comfortable* to the question concerning the new shoes may be a compliment if the shoes are loafers or hiking shoes, or it might be indirect criticism if the shoes are expensive dress shoes, for which the most important characteristic might be their appearance. But whether we perceive it as indirect criticism or not depends on whether we think of the feature to which the praise is directed as peripheral or not, i.e., whether we perceive the speaker's remark as fitting the formula underlying indirect criticism.

In short, in this seasonal longitudinal study, those implicatures on which NNS perform noticeably less well than NS after having been immersed in an American educational environment for an extended period tended to be those based on a formula of some sort - structural, semantic, pragmatic or some combination of these. Only one of the 7 items on which the three immersion groups performed less well was relevance-based, and the only ones based on a formula in the easiest set were related to the Minimum Requirement Rule and the scalar implicature. So we have seen that implicatures differ in their opaqueness and that, in addition to the cultural background of the speaker and hearer, one factor contributing to this variation is the nature of the implicature itself - especially whether or not its derivation is based on a formula of some sort.

A second thing that we can learn from our analysis is that it takes considerable time for NNS to master many of the implicature types that were quite easy for NS to recognize and unravel. At first, the results associated with the 17 month, 33 month, and 4-7 year groups seem to indicate that much of the increase in the ability of the NNS to interpret American English implicatures appropriately came within the first 17 months that they were on campus. However, the data in Tables 4 and 5 shows clearly that the 17 month group has mastered none of the types of implicature listed there. For that group, 9 of 10 items covered in those two tables proved sufficiently difficult to make the difference in the percentage of those answering as expected at least 14 points below that of the NS. In this sense, the troubles that interfered with the performance of the 17 month group came from whole types of implicatures, not from isolated instances of those types. In their 17 month residence, they had mastered no formulaic implicatures that were troublesome for them when they first arrived. For the 33 month and 4-7 year groups, on the other hand, this seemed to be less true: for the most part, their problems

seemed to be with specific implicatures and not with whole types.

And so it seems that progress in the development of the knowledge and skills that are needed to interpret implicatures other than those based on the Relevance Maxim or on the Minimum Requirement Rule is a slow process. Furthermore, given the fact that the performance of the NNS groups in the interpretation of most of the **relevance-based implicatures** was as effective as that of the NS, the statistically significant difference between the 17 month, 33 month, and 4-7 year groups and the NS on the test as a whole rests squarely on the formula based implicatures in this study. If it is possible to help NNS increase their ability to interpret these other types of implicatures through instruction in the ESL classroom focused on that objective, then certainly that should be done.

CAN IMPLICATURES BE TAUGHT IN THE ESL CLASSROOM? - A PILOT STUDY

We turn now to a pilot study conducted in the spring, 1993. Prior to that study, it was not at all certain that skills such as these could be taught successfully. Very few ESL texts deal explicitly with this type of communication, and those that do tend to do so only rarely (Bouton, 1990). At the same time, Harris and Chen (1993) report that students enrolled in a short term ESL course in which there was no effort to focus on the development of the skills needed to interpret implicatures in English made no progress at all in this direction. Furthermore, the same conclusion can be drawn from the studies reported on here, since most of the NNS in the immersion groups had been required to take at least one 6 semester hour ESL course during their time on campus. And finally, there was the position espoused by an anonymous reviewer of a paper recently submitted for publication. He commented: "Until we know what kind of skill or whatever implicature is, we cannot reasonably argue that we can teach it. Students can learn it, obviously, and the author should leave it that way." But we have just shown that although students do make considerable progress on their own, those implicature types that are formulaic and were difficult for the NNS when they arrived on campus remained reasonably so - even after periods of from 17 months to 4+ years. And so there was a problem that needed to be dealt with - a question that needed to be answered. We had to find out if the anonymous scholar was right? Was the ability to interpret implicature in English something that we could not teach until our understanding of the nature of implicature itself was more complete?

The rest of this paper will discuss the pilot study. It's purpose was to determine whether focused instruction in the ESL classroom could speed the progress of the NNS attempting to interpret implicature. The results suggest that the answer to that question is a definite *Yes*, though with some qualifications: some types of implicature seem to be more amenable to the instructional approach that we took than others were.

The subjects involved in this study were international students from various departments at the University of Illinois who were taking a regular university course in academic English. One section of that course consisting of 14 students was introduced to the idea of implicature as a tool of indirect communication and to five specific forms that it can take. Three of these - the *Pope Q implicature, Indirect Criticism,* and those involving a *Sequence of Events* - were formulaic and responded well to the instruction we provided. *Irony* remained

difficult at the end of the instruction period, but considerable progress had been made. Only those that were *Relevance-based* and had proved difficult initially proved resistant to our approach.

No items from the test itself were used, of course, since the same instrument was to be the measure of progress at the end of the instruction by defining the relative growth of the experimental and control groups. Instead, examples like those in (10)-(14) were used. The lines containing the implicature to be interpreted in each case are in bold type.

(10) The **POPE Q** implicature:

A: Is Brad a talker?
B: **Is the Pope Catholic?**

(11) **Indirect criticism:**

A: Have you seen *Robin Hood*?
B: Yeah. I went last night.
A: What did you think of it?
B: **The cinematography was great.**
A: Oh, that bad, huh?

(12) **Irony**:

A: Hi, Anne.
B: Hi Joan. What's up?
A: I was wondering if I could ask a small favor of you. Would you read my Linguistics 441 paper?
B: Gosh, Joan, I wish I could, but I promised Jack I'd go bowling with him tonight.
A: Yeah. Well, **Thanks for the help!**

(13) **Relevance:**

A: How about going for a walk?
B: Isn't it raining out?

(14) **Sequence** - easily seen in the oddness of sentences like...

>> **Jack jumped out of bed and woke up.**
>> **Mary went out to her car, drove off, started the engine and got in,** just as it started to rain.

The control group for this part of the study consisted of two other sections of the same

ESL course. These sections followed the regular syllabus and received no explicit instruction directed at the enhancement of their ability to recognize and use implicature, since no such instruction would normally have been given.

The initial objectives of the instruction given the students in the experimental section were four: 1) to make them aware of different types of implicature as normal tools of indirect communication in American English; 2) to help them find examples of different types of implicature in both American English and in their own languages (if such examples exist there); 3) to help them learn to recognize and interpret implicatures they hear in their daily interaction with others; and 4) to encourage them to use implicature in appropriate situations.

The instruction itself, which included roughly 6 hours of class time spread over a 6 week period, followed two basic strategies. One of these involved the formal introduction of each implicature type by way of a handout that defined and labeled it and provided several examples of how it might work in different contexts.

These examples provided a springboard for a free-flowing discussion of each new implicature type. In each case, the students were asked to identify the implicature, to explain how they knew that the utterance involved was not to be taken literally and to indicate what message it conveyed. They were also encouraged to offer similar examples that they had heard outside the classroom and to describe similar implicatures that they might have in their own languages. During the introduction of the POPE Q implicature, for example, students noted that in China one hears *Does the sun come up in the west?*; in Puerto Rico, *Will you have poinsettias at Christmas time?*; and in Venezuela, *Does a frog have hair?* [11]

Finally, on occasion during these introductory sessions, students were put in groups of two or three and asked to make up their own dialogues containing the type of implicature that they were discussing that day. In the session devoted to irony, for example, one group came up with the ironic comment that *China is so free you can go to jail any time you want to.*

In each of these formal sessions, students were particularly interested in factors such as register and, by extension, how the relationship between the participants in a conversation made the use of a particular type of implicature more (or less) appropriate. They wanted to know, for example, whether one could use the POPE Q implicature to one's employer or academic advisor. This type of analysis and discussion was typical of the formal introductory sessions for each of the five types of implicature taken up.

The first strategy, then, involved a relatively formal treatment of each of the 5 types of implicature, with each session lasting from 20 to 40 minutes. During the rest of the 6 weeks covered by the study, a second, more informal strategy was followed. For example, every 3 or 4 days, the teacher would bring up examples of implicature during the *warm up* at the beginning of the class and ask students what was going on in each case. She also tried to alert students to some of the more obvious instances of implicature that were used in their own classroom. And she encouraged students to bring in examples from their daily experiences on campus.

So what did we find out? Can NNS develop the skills needed to interpret implicatures appropriately in English more rapidly through formal instruction? On the basis of this pilot study, as Tables 6 through 8 indicate, the answer is clearly *Yes*. The mean score of the experimental group rose from 15.21 before the instruction to 18.80 afterwards, which was a statistically significant improvement ($p < .001$). By contrast, the performance of the control group,

who had had no instruction related to implicature, had not changed significantly. Also, the overall ability of the experimental group to interpret these 22 implicatures appropriately was not significantly different from that of the three immersion groups (see Table 6).

Table 6: A Comparison of the Performance of the Experimental and Control Groups with That of the Immersion Groups at the End of Their Respective Learning Periods

	Experimental Groups				Immersion Groups			NS
	Experimental		Control		17 Mo	33 Mo	4-7 Yr	
	Pre-	Post	Pre-	Post	Post	Post	Post	
Items	22	22	22	22	22	22	22	22
Mean	15.21	18.80	15.66	16.53	18.06	18.80	18.74	19.92
Std Dev	1.93	1.81	2.44	2.14	3.11	1.62	2.68	1.54
Raw Score	11-18	15-21	10-20	10-20	9-22	15-21	11-22	15-22
N	14	14	32	32	34	35	34	77

But just as we saw with the discussion of the progress made by the immersion groups, the overall statistical comparisons give us only part of the story. Again, we must look at the NNS performance on different types of implicatures to complete the picture. Consider, for example, the data in Table 7, which compares the performance of the experimental group with that of the immersion groups in relation to the implicatures based on relevance and the Minimum Requirement Rule. (The scores in bold type are those for items on which the experimental group

Table 7: Comparison of the Performance of the Experimental and Immersion Groups on Implicatures Based on Relevance and the MRR

	Experimental		Immersion Groups			NS	Type
Item	Pre-	Post	17 Mo	33 Mo	4-7 Yr	NS	
4	93	100	97	97	94	97	Relevance
5	**93**	**86**	85	91	97	100	Relevance
10	93	100	97	94	100	100	Relevance
13	**93**	**79**	91	94	94	97	Relevance
16	100	100	100	100	100	100	Relevance
19	100	100	94	100	100	100	Relevance
21	**71**	**64**	82	94	82	96	Relevance
23	71	79	88	89	94	95	Relevance
25	**86**	**64**	88	89	79	88	Relevance
12	**93**	**86**	74	89	85	81	Min. Req. Rule
20	**86**	**86**	82	83	82	81	Min. Req. Rule
24	64	71	74	86	68	70	Scalar
AVG	86.9	84.6	87.7	92.1	89.6	92.1	----

performed less well after the instruction than they had before. Those items for which an immersion group failed to come within 14 percentage points of the NS are in italics.)

In our earlier discussion (see Table 3), we noted that relevance-based implicatures and those based on the Minimum Requirement Rule have proved relatively easy for the immersion groups to handle , and that their overall average for these two implicature types improved slightly with time. But the first thing that we notice in Table 7 is that this did not prove to be so for the experimental group **after** they had received their instruction. In fact, although their overall average for this set, remained essentially the same, on 6 of the 12 items represented in Table 7, the percent of the group answering as expected actually declined. Why this should have happened in regard to relevance-based implicatures we are unable to say, since no post performance interviews were conducted.

The other two items showing no improvement or an actual decline on the second testing, items (13) and (20), were related to the Minimum Requirement Rule, which was not dealt with in any way during the classroom instruction. Since, as we will see below, the experimental group tended to show significant improvement in their interpretation of all of those formulaic implicatures on which they did receive instruction, and since the MRR is a formula based implicature (albeit it a relatively easy one for NNS to interpret), it is possible that their failure to handle the implicatures related to the Minimum Requirement Rule effectively was a result of their not having been introduced to that particular type in any way during the instruction period. This possibility gains some support from the fact that the scalar implicature, another type that is formulaic (Levinson, 1983, p. 132) and was not presented to the experimental group during the 3 hours of instruction, also saw the students make little progress in learning to interpret it.

Table 8: Comparison of the Performance of the Experimental and Immersion Groups on Irony and on the 3 Formalaic Implicatures in Which the Experimental Group Received Instruction

	Experimental		Immersion Groups			NS	Type
Item	Pre-	Post	17 Mo	33 Mo	4-7 Yr	NS	
1	64	100	62	71	53	86	POPE Q
7	86	100	97	94	82	99	POPE Q
17	86	93	82	86	91	100	POPE Q
2	50	93	82	94	94	94	Indirect Crit.
8	71	93	91	91	99	91	Indirect Crit.
15	29	79	76	71	76	100	Indirect Crit.
22	57	100	76	76	91	64	Indirect Crit.
11	43	86	76	86	64	91	Seq. of Events
6	21	57	57	57	76	84	Irony
18	43	71	71	60	56	75	Irony
AVG	55.0	87.2	74.8	78.6	78.3	88.4	----

We turn now to three formulaic types of implicature and to irony, all of which were the focus of instruction. As Table 8 indicates, the instruction focused on the development of skills necessary to the interpretation of these implicatures was highly effective and the progress of the experimental group considerable. With just 6 hours of instruction, the percentage of those in the experimental group who could derive the expected message from these items jumped by an average of 32 points: they responded appropriately as often as the NS, and more often than any of the immersion groups. Furthermore, there was only one implicature in this set on which they did not make this remarkable progress, i.e., (17), and even there there was some improvement. As for irony, while it remained difficult for all of the NNS, the percent of the experimental group who were able to understand the two items based on it exactly doubled and was as good or better than that of any of the immersion groups.

When comparing the progress of the experimental group with that of the three immersion groups, it is important to emphasize here that many of the members of the immersion groups had had regular ESL instruction while on campus, but that none of that instruction had been focused on the interpretation of implicature. In other words, this pilot study seems to indicate that NNS can develop a proficiency in the interpretation of implicature through 3 or 4 hours of formal instruction and a certain amount of informal follow-up that it takes 3 years or more of immersion in the cultural milieu of an American university, including participation in traditional ESL courses, to attain otherwise. Furthermore, journal entries made by the students at the end of the 6 weeks indicated a high interest on their part in what they had learned and a sense that it had already helped them in their interaction with Americans and would continue to do so.

But were there any particular types of implicature that seemed especially easy or especially hard to learn - or to teach? Again the answer seems to be *Yes*. As we noted above, some relevance-based implicatures such as (8) are among those that still prove difficult to interpret both for the long term immersion groups and for the experimental group. More than that, in spite of the fact that the experimental group received a lesson designed to help them develop competence in the use of relevance-based implicatures, they performed less effectively after the 6 weeks of instruction that they had before it began on 4 of the 9 relevance-based items included in this test. As we suggested earlier, the idiosyncratic nature of the many instances of this type of implicature may make the generalization of skills developed in relation to one of them difficult to transfer to another. [12] On the other hand, as we found in our discussion of the progress of the immersion groups earlier in this paper, most relevance-based implicatures are among those that NNS handle easily as soon as they arrive in the United States. Seven of the 10 implicatures in Table 3, from which NS and NNS were most likely to derive the same message, were relevance-based implicatures. From these facts, it would seem that we should not teach the relevance-based implicatures at all until specific ones prove difficult. And when it does become necessary to help students interpret one or more of them, that help will in all likelihood relate to culture points in the context in which it is found. Of course, there are undoubtedly subsets of relevance implicatures the members of which are closely enough related to permit generalization from one to the other on a small scale. In (11), for instance, we could substitute *June* or *July* for *August*, and anyone who understood the implicature as it stands would understand the revised version.

(11) Sam: Do you think we'll need to wear jackets tonight?
Sue: Sam, it's August!

And so, the lack of any overall system underlying relevance implicatures in general means that they can be neither taught nor learned systematically. Once the students have developed an awareness of the existence of relevance implicatures, we should deal with them individually in the classroom as the need arises rather than as a whole set. Formulaic implicatures, on the other hand, are inherently systematic and can be approached effectively from that perspective.

CONCLUSION

Earlier studies have shown that NNS arriving in the United States tend to have difficulty deriving the same message that native speakers do from several different types of American English implicature. At the same time, the skills needed by NNS if they are to be more effective in interpreting implicatures in English develop rather slowly, especially with regard to implicatures that are formulaic or those that are based on some specific point of culture with which the learner does not happen to come into contact.

On the other hand, **formal instruction designed to develop those skills seems to be highly effective when it is focused on the more formulaic implicatures**. At the end of the 6 week pilot study described here, the subjects given formal instruction were able to perform as well as other NNS who had been attending the University of Illinois for periods of from 17 months to more than 4 years, but who had not received systematic help in interpreting American implicature. The other, more idiosyncratic, relevance-based implicatures, on the other hand, proved as resistant to formal instruction as they had to the natural learning processes that went on in the case of the NNS are immersed in the American university environment. Given these facts, together with the demonstrated importance of implicature in our daily interaction, it would seem that helping NNS learn to interpret and use the various types of implicature that we can teach successfully should be an integral facet of an ESL program. At the same time, we should also be searching for ways to approach relevance-based implicatures more effectively, and we should be alert to the existence of other implicature types of which we are not presently aware with an eye to including them in our program as well. The percent of class time would be negligible; the learning process, greatly speeded up. What's more, the alternative is to leave our students to learn in 3 or more years what we could teach them in the matter of a very few hours.

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NOTES

[1] Devine (1983) carried out two small pilot studies involving 15 native speakers of American English and 15 NNS from various linguistic and cultural backgrounds. On the basis of this study, she supported Keenan (1976), arguing that "speakers do not uniformly respond to these rules as a Gricean analysis predicts they will" (p. 203). And she continues: "The research further suggests that the failure to recognize implicature is related to the conversational expectations of the interlocutors, and that these expectations may vary because of cultural or situational constraints on the operation of these rules" (p. 203). However, the small size and cultural diversity of her NNS sample, together with the fact that she had to discard approximately 30% of her evidence as inconclusive, made her conclusions tentative and further investigation into the ability of people from different cultural backgrounds to communicate through implicature essential.

[2] We will refer to nonnative English speaking international students throughout this paper with the acronym NNS and to native speakers of American English as NS.

[3] These 436 NNS were those whose TOEFL scores required them to take the university's English Placement Test, in conjunction with which this implicature test was administered. The TOEFL scores for this group ranged from 467 to 672, with 95% falling between 500 and 600 and with a mean score of 554.

[4] We settled on the multiple choice format when it was discovered that an open ended format in which the subjects expressed the meaning of the implicature in their own words led to a great many ambiguous responses that could not be evaluated accurately and, therefore, had to be discarded (Devine, 1982; Bouton, 1988).

[5] This item has proved difficult for all NNS subjects, regardless of how long they have been in the United States. After 4 1/2 years in Illinois, only 50% of the NNS selected (a), i.e., that Peter was not behaving as a good friend should, as the best interpretation of Bill's remark. This compares with 86% of the American NS. Fifty percent is, however, an improvement over the first time these NNS interpreted that item; then, only 33% of them selected (a). The most popular distracter among the NNS both times was (c): Peter is a good friend and Bill can trust him.

[6] Among the NNS who responded to this item after 4 1/2 years at Illinois, only 66% responded as expected, as compared with 82% of the NS. Both of these percentages are quite low when compared with the numbers from other groups who have interpreted essentially the same implicature on other occasions. In these other instances, over 90% of all subjects, NS and NNS alike, chose (a) as expected.

[7] This percentage expresses the ratio between the NNS and NS mean scores (SCORE nns /SCORE ns). The number given here (79.5%) is not the same, however, as that reported initially (Bouton, 1988), which was 75%. The reason for the difference is that ongoing analyses of the results from this and subsequent administrations of this test suggested that 5 items were unreliable: 4 of those were inconsistent in the response they elicited from native speakers and one was shown to focus on conventional rather than conversational implicature. With these 5 items removed, the scores of both the NS and the NNS improved and the ratio of the NNS mean to that of the NS increased from 75% to 80% All results reported in this paper for this initial (1986) study, and for the 4 1/2 year follow up are calculated on the basis of NS and NNS responses to the 28 reliable items.

[8] As we noted earlier, one example of an assumption made by 84% of the American NS but by only 37% of the NNS on arrival in 1986 and 50% in 1991 is the one underlying the implicature in example (1) above in which Bill is told by friends that his wife has been out dancing with Peter. That Bill does not indicate that he was aware of the situation is interpreted by Americans as evidence that he did not know about it; and since he did not know about it, the Americans assumed that the relationship between Bill's wife and his friend must be illicit. The overriding assumption of most NNS who interpreted Bill's response differently was that Peter would not betray his friendship with Bill and so would not become involved in an illicit relationship with his wife.

[9] This new version of the test was normed against the responses of 77 American NS undergraduates at the University of Illinois. As with the first test in 1986, the 304 NNS taking this revised version in August, 1990, consisted of all those required to take the EPT.

[10] These NNS groups are considered *immersion groups* since they have not received any formal training designed to develop the skills needed to interpret implicatures appropriately in the American English context. Later in this paper, they will be contrasted with groups who have undergone such training.

[11] The pedagogical approach used with the experimental section was developed entirely by their classroom teacher, Jane Nicholls, whose excellent instruction is responsible for the firm grasp of implicature that her students demonstrated at the end of the instruction period.

[12] Relevance implicatures are themselves unsystematic in that they arise from the idiosyncratic make up of a particular situation built around particular bits of American culture. Until the NNS become familiar with the specific culture points involved, they cannot recognize or interpret implicatures growing from them. It is for this reason that problems in interpreting specific, troublesome relevance-based implicatures have stubbornly persisted, even for those NNS who have been on campus for from 33 months to 4-7 years.

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